OIPE

RAW SEQUENCE LISTING   DATE: 02/28/2002
PATENT APPLICATION: US/10/051,902   TIME: 10:25:24

Input Set : N:\Crf3\RULE60\10051902.raw.txt
Output Set: N:\CRF3\02282002\J051902.raw

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         1 <110> APPLICANT: Allen, Steve
         2        Hitz, Bill
         3        Kinney, Tony
         4        Tingey, Scott
         5 <120> TITLE OF INVENTION: Plant Sugar Transport Proteins
         6 <130> FILE REFERENCE: BB-1163
         7 <140> CURRENT APPLICATION NUMBER: 10/051,902
C-->     8 <141> CURRENT FILING DATE: 2002-01-17
         9 <150> PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: US/09/291,922
W-->    10 <151> PRIOR FILING DATE: EARLIER FILING DATE: 1999-04-14
        11 <160> NUMBER OF SEQ ID NOS: 30
        12 <170> SOFTWARE: Microsoft Office 97
        14 <210> SEQ ID NO: 1
        15 <211> LENGTH: 2824
        16 <212> TYPE: DNA
        17 <213> ORGANISM: Zea mays
        18 <220> FEATURE:
        19 <221> NAME/KEY: unsure
        20 <222> LOCATION: (29)
        21 <220> FEATURE:
        22 <221> NAME/KEY: unsure
        23 <222> LOCATION: (622)
        24 <220> FEATURE:
        25 <221> NAME/KEY: unsure
        26 <222> LOCATION: (636)
        27 <220> FEATURE:
        28 <221> NAME/KEY: unsure
        29 <222> LOCATION: (638)
        30 <220> FEATURE:
        31 <221> NAME/KEY: unsure
        32 <222> LOCATION: (669)
        33 <220> FEATURE:
        34 <221> NAME/KEY: unsure
        35 <222> LOCATION: (771)
        36 <220> FEATURE:
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        38 <222> LOCATION: (822)
        39 <220> FEATURE:
        40 <221> NAME/KEY: unsure
        41 <222> LOCATION: (856)
        42 <220> FEATURE:
        43 <221> NAME/KEY: unsure
        44 <222> LOCATION: (889)
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RAW SEQUENCE LISTING   DATE: 02/28/2002
PATENT APPLICATION: US/10/051,902   TIME: 10:25:24

Input Set : N:\Crf3\RULE60\10051902.raw.txt
Output Set: N:\CRF3\02282002\J051902.raw

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 45 <220> FEATURE:
 46 <221> NAME/KEY: unsure
 47 <222> LOCATION: (896)
 48 <220> FEATURE:
 49 <221> NAME/KEY: unsure
 50 <222> LOCATION: (944)
 51 <400> SEQUENCE: 1
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     53      tccgcacccc tcgctctcca accccaacgc gcggcgttgc taaaattcac ctcagcgcgt   120
     54      actccagttt ggccacctca ccacccgccg ccgctgttta agaaggcccc gcgcccgatc   180
     55      ggggatcacg aaccttggcc gccgctgccg gagtgggggc gtagatttcc ggcggccatg   240
     56      ggggcgccg tgatggtcgc catcgcggcc tctatcggca acttgctgca gggctgggac   300
     57      aatgcgacaa ttgctggagc cgtcctgtac ataaagaagg aattcaacct gcagagcgag   360
     58      cctctgatcg aaggcctcat cgtcgccatg ttcctcattg gggcaacagt catcacaaca   420
     59      tctccggggc caagggctga ctgcgttggt aggaggccca tgctggtcgc ctcggctgtc   480
     60      ctctacttcg tcagtgggct ggtgatgctt tgggcgccaa ttgtgtacat cttgctcctc   540
     61      gcaaggctca ttgatgggtt cggtatcggt ttggcggtca cacttgttcc tctctacatc   600
W--> 62      tccgaaactg caccgcacag anattcttgg ggctgntnga acacgttgcc gcagttcatt   660
W--> 63      ggggtcagng gagggatgtt cctctcctac tgcatggtgt ttgggatgtc cctcatgccc   720
W--> 64      aaacctgatt ggaggctcat gcttggagtt ctgtcgatcc cgtcacttat ntactttgga   780
W--> 65      ctgactgtct tctacttgcc tgaatcacca aggtggcttg tnagcaaagg aaggatggcg   840
W--> 66      gaggcgaaga gagtgntgca aaggctgcgg ggaagagaag atgtctcang ggaganggct   900
W--> 67      cttctagttg aaggtttggg ggtcggtaaa gatacacgta tttnagagta catcattgga   960
     68      cctgccaccg aggcagccga tgatcttgta actgacggtg ataaggaaca aatcacactt  1020
     69      tatgggcctg aagaaggcca gtcatggatt gctcgacctt ctaagggacc catcatgctt  1080
     70      ggaagtgtgc tttctcttgc atctcgtcat gggagcatgg tgaaccagag tgtacccctt  1140
     71      atggatccga ttgtgacact ttttggtagt gtccatgaga atatgcctca agctggagga  1200
     72      agtatgagga gcacattgtt tccaaacttt ggaagtatgt tcagtgtcac agatcagcat  1260
     73      gccaaaaatg agcagtggga tgaagagaat cttcataggg atgacgagga gtacgcatct  1320
     74      gatggtgcag gaggtgacta tgaggacaat ctccatagcc cattgctgtc caggcaggca  1380
     75      acaggtgcgg aaggaaggga cattgtgcac catggtcacc gtggaagtgc tttgagcatg  1440
     76      agaaggcaaa gcctcttagg ggagggtgga gatggtgtga gcagcactga tatcggtggg  1500
     77      ggatggcagc ttgcttggaa atggtcagag aaggaaggtg agaatggtag aaaggaaggt  1560
     78      ggtttcaaaa gagtctactt gcaccaagag ggagttcctg gctcaagaag gggctcaatt  1620
     79      gtttcacttc ccggtggtgg cgatgttctt gagggtagtg agtttgtaca tgctgctgct  1680
     80      ttagtaagtc agtcagcact tttctcaaag ggtcttgctg aaccacgcat gtcagatgct  1740
     81      gccatggttc acccatctga ggtagctgcc aaaggttcac gttggaaaga tttgtttgaa  1800
     82      cctggagtga ggcgtgccct gttagtcggt gttggaattc agatccttca acagtttgct  1860
     83      ggaataaacg gtgttctgta ctataccccca caaattcttg agcaagctgg tgtggcagtt  1920
     84      attctttcca aatttggtct cagctcggca tcagcatcca tcttgatcag ttctctcact  1980
     85      accttactaa tgcttccttg cattggcttt gccatgctgc ttatggatct ttccggaaga  2040
     86      aggtttttgc tgctaggcac aattccaatc ttgatagcat ctctagttat cctggttgtg  2100
     87      tccaatctaa ttgatttggg tacactagcc catgctttgc tctccaccat cagtgttatc  2160
     88      gtctacttct gctgcttcgt tatggggattt ggtcccatcc ccaacatttt atgtgcagag  2220
     89      atctttccaa ccagggttcg tggcctctgt attgccattt gtgcctttac attctggatc  2280
     90      ggagatatca tcgtcaccta cagccttcct gtgatgctga atgctattgg actggcgggt  2340
     91      gttttcagca tatatgcagt cgtatgcttg atttcctttg tgttcgtctt ccttaaggtc  2400
     92      cctgagacaa agggatgcc ccttgaggtt attaccgaat tctttgcagt tggtgcgaag  2460
     93      caagcggctg caaaagccta atttctttgg taccttgtg tgcaactatt gcactgtaag  2520
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/051,902

DATE: 02/28/2002
TIME: 10:25:24

Input Set : N:\Crf3\RULE60\10051902.raw.txt
Output Set: N:\CRF3\02282002\J051902.raw

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94        ttagaaactt gaaggggttt caccaagaag ctcggagaat tactttggat ttgtgtaaat 2580
95        gttaagggaa cgaacatctg ctcatgctcc tcaaacggta aaaaagagtc cctcaatggc 2640
96        aaataggagt cgttaagttg tcaatgtcat ttaccatatg ttttacctat ttgtactgta 2700
97        ttataagtca agctattcaa cgctggttgt tgctagaaat ctttagaaca aagatgataa 2760
98        tgatctgatc tgatgttata atattcaaat ctcaaataaa gaaaatatcg tttctcaaaa 2820
99        aaaa                                                              2824
101 <210> SEQ ID NO: 2
102 <211> LENGTH: 747
103 <212> TYPE: PRT
104 <213> ORGANISM: Zea mays
105 <220> FEATURE:
106 <221> NAME/KEY: UNSURE
107 <222> LOCATION: (129)
108 <220> FEATURE:
109 <221> NAME/KEY: UNSURE
110 <222> LOCATION: (133)..(134)
111 <220> FEATURE:
112 <221> NAME/KEY: UNSURE
113 <222> LOCATION: (144)
114 <220> FEATURE:
115 <221> NAME/KEY: UNSURE
116 <222> LOCATION: (178)
117 <220> FEATURE:
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119 <222> LOCATION: (207)
120 <220> FEATURE:
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123 <220> FEATURE:
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125 <222> LOCATION: (220)
126 <220> FEATURE:
127 <221> NAME/KEY: UNSURE
128 <222> LOCATION: (236)
129 <400> SEQUENCE: 2
130         Met Gly Gly Ala Val Met Val Ala Ile Ala Ala Ser Ile Gly Asn Leu
131          1               5                  10                  15
132         Leu Gln Gly Trp Asp Asn Ala Thr Ile Ala Gly Ala Val Leu Tyr Ile
133                     20                  25                  30
134         Lys Lys Glu Phe Asn Leu Gln Ser Glu Pro Leu Ile Glu Gly Leu Ile
135                 35                  40                  45
136         Val Ala Met Phe Leu Ile Gly Ala Thr Val Ile Thr Thr Ser Pro Gly
137             50                  55                  60
138         Pro Arg Ala Asp Cys Val Gly Arg Arg Pro Met Leu Val Ala Ser Ala
139         65                  70                  75                  80
140         Val Leu Tyr Phe Val Ser Gly Leu Val Met Leu Trp Ala Pro Ile Val
141                         85                  90                  95
142         Tyr Ile Leu Leu Leu Ala Arg Leu Ile Asp Gly Phe Gly Ile Gly Leu
143                     100                 105                 110
```

RAW SEQUENCE LISTING   DATE: 02/28/2002
PATENT APPLICATION: US/10/051,902   TIME: 10:25:24

Input Set : N:\Crf3\RULE60\10051902.raw.txt
Output Set: N:\CRF3\02282002\J051902.raw

```
        144    Ala Val Thr Leu Val Pro Leu Tyr Ile Ser Glu Thr Ala Pro His Arg
        145        115                 120                 125
W--> 146    Xaa Ser Trp Gly Xaa Xaa Asn Thr Leu Pro Gln Phe Ile Gly Val Xaa
        147        130                 135                 140
        148    Gly Gly Met Phe Leu Ser Tyr Cys Met Val Phe Gly Met Ser Leu Met
        149    145                 150                 155                 160
        150    Pro Lys Pro Asp Trp Arg Leu Met Leu Gly Val Leu Ser Ile Pro Ser
        151                    165                 170                 175
W--> 152    Leu Xaa Tyr Phe Gly Leu Thr Val Phe Tyr Leu Pro Glu Ser Pro Arg
        153            180                 185                 190
W--> 154    Trp Leu Val Ser Lys Gly Arg Met Ala Glu Ala Lys Arg Val Xaa Gln
        155            195                 200                 205
W--> 156    Arg Leu Arg Gly Arg Glu Asp Val Ser Xaa Glu Xaa Ala Leu Leu Val
        157            210                 215                 220
W--> 158    Glu Gly Leu Gly Val Gly Lys Asp Thr Arg Ile Xaa Glu Tyr Ile Ile
        159    225                 230                 235                 240
        160    Gly Pro Ala Thr Glu Ala Ala Asp Asp Leu Val Thr Asp Gly Asp Lys
        161                    245                 250                 255
        162    Glu Gln Ile Thr Leu Tyr Gly Pro Glu Glu Gly Gln Ser Trp Ile Ala
        163                    260                 265                 270
        164    Arg Pro Ser Lys Gly Pro Ile Met Leu Gly Ser Val Leu Ser Leu Ala
        165            275                 280                 285
        166    Ser Arg His Gly Ser Met Val Asn Gln Ser Val Pro Leu Met Asp Pro
        167            290                 295                 300
        168    Ile Val Thr Leu Phe Gly Ser Val His Glu Asn Met Pro Gln Ala Gly
        169    305                 310                 315                 320
        170    Gly Ser Met Arg Ser Thr Leu Phe Pro Asn Phe Gly Ser Met Phe Ser
        171                    325                 330                 335
        172    Val Thr Asp Gln His Ala Lys Asn Glu Gln Trp Asp Glu Glu Asn Leu
        173                    340                 345                 350
        174    His Arg Asp Asp Glu Glu Tyr Ala Ser Asp Gly Ala Gly Gly Asp Tyr
        175            355                 360                 365
        176    Glu Asp Asn Leu His Ser Pro Leu Leu Ser Arg Gln Ala Thr Gly Ala
        177            370                 375                 380
        178    Glu Gly Lys Asp Ile Val His His Gly His Arg Gly Ser Ala Leu Ser
        179    385                 390                 395                 400
        180    Met Arg Arg Gln Ser Leu Leu Gly Glu Gly Gly Asp Gly Val Ser Ser
        181                    405                 410                 415
        182    Thr Asp Ile Gly Gly Gly Trp Gln Leu Ala Trp Lys Trp Ser Glu Lys
        183            420                 425                 430
        184    Glu Gly Glu Asn Gly Arg Lys Glu Gly Gly Phe Lys Arg Val Tyr Leu
        185            435                 440                 445
        186    His Gln Glu Gly Val Pro Gly Ser Arg Arg Gly Ser Ile Val Ser Leu
        187            450                 455                 460
        188    Pro Gly Gly Gly Asp Val Leu Glu Gly Ser Glu Phe Val His Ala Ala
        189    465                 470                 475                 480
        190    Ala Leu Val Ser Gln Ser Ala Leu Phe Ser Lys Gly Leu Ala Glu Pro
        191            485                 490                 495
        192    Arg Met Ser Asp Ala Ala Met Val His Pro Ser Glu Val Ala Ala Lys
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/051,902

DATE: 02/28/2002
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Input Set : N:\Crf3\RULE60\10051902.raw.txt
Output Set: N:\CRF3\02282002\J051902.raw

```
193                  500                  505                  510
194      Gly Ser Arg Trp Lys Asp Leu Phe Glu Pro Gly Val Arg Arg Ala Leu
195          515                  520                  525
196      Leu Val Gly Val Gly Ile Gln Ile Leu Gln Gln Phe Ala Gly Ile Asn
197          530                  535                  540
198      Gly Val Leu Tyr Tyr Thr Pro Gln Ile Leu Glu Gln Ala Gly Val Ala
199      545                  550                  555                  560
200      Val Ile Leu Ser Lys Phe Gly Leu Ser Ser Ala Ser Ala Ser Ile Leu
201                  565                  570                  575
202      Ile Ser Ser Leu Thr Thr Leu Leu Met Leu Pro Cys Ile Gly Phe Ala
203                  580                  585                  590
204      Met Leu Leu Met Asp Leu Ser Gly Arg Arg Phe Leu Leu Leu Gly Thr
205                  595                  600                  605
206      Ile Pro Ile Leu Ile Ala Ser Leu Val Ile Leu Val Val Ser Asn Leu
207          610                  615                  620
208      Ile Asp Leu Gly Thr Leu Ala His Ala Leu Leu Ser Thr Ile Ser Val
209      625                  630                  635                  640
210      Ile Val Tyr Phe Cys Cys Phe Val Met Gly Phe Gly Pro Ile Pro Asn
211                  645                  650                  655
212      Ile Leu Cys Ala Glu Ile Phe Pro Thr Arg Val Arg Gly Leu Cys Ile
213                  660                  665                  670
214      Ala Ile Cys Ala Phe Thr Phe Trp Ile Gly Asp Ile Ile Val Thr Tyr
215                  675                  680                  685
216      Ser Leu Pro Val Met Leu Asn Ala Ile Gly Leu Ala Gly Val Phe Ser
217          690                  695                  700
218      Ile Tyr Ala Val Val Cys Leu Ile Ser Phe Val Phe Val Phe Leu Lys
219      705                  710                  715                  720
220      Val Pro Glu Thr Lys Gly Met Pro Leu Glu Val Ile Thr Glu Phe Phe
221                  725                  730                  735
222      Ala Val Gly Ala Lys Gln Ala Ala Ala Lys Ala
223                  740                  745
225 <210> SEQ ID NO: 3
226 <211> LENGTH. 443
227 <212> TYPE: DNA
228 <213> ORGANISM: Oryza sativa
229 <220> FEATURE:
230 <221> NAME/KEY: unsure
231 <222> LOCATION: (193)
232 <220> FEATURE:
233 <221> NAME/KEY: unsure
234 <222> LOCATION: (388)
235 <220> FEATURE:
236 <221> NAME/KEY: unsure
237 <222> LOCATION: (435)
238 <220> FEATURE:
239 <221> NAME/KEY: unsure
240 <222> LOCATION: (439)
241 <400> SEQUENCE: 3
242      gaagagctca cccccccccc ctcggccctg gactccctcc tccaaatctc ccctaaaagc   60
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VERIFICATION SUMMARY   DATE: 02/28/2002
PATENT APPLICATION: US/10/051,902   TIME: 10:25:25

Input Set : **N:\Crf3\RULE60\10051902.raw.txt**
Output Set: **N:\CRF3\02282002\J051902.raw**

```
L:8 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:10 M:256 W: Invalid Numeric Header Field. Wrong Prior FILING DATE:YYYY-MM-DD
L:52 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:1
L:52 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:62 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:1
L:62 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:63 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:1
L:63 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:64 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:1
L:64 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:65 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:1
L:65 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:66 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:1
L:66 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:67 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:1
L:67 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:146 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:2
L:146 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:152 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:2
L:152 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:154 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:2
L:154 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:156 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:2
L:156 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:158 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:2
L:158 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:245 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:3
L:245 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:248 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:3
L:248 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:249 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:3
L:249 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:270 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:4
L:270 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:278 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:4
L:278 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:611 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:11
L:611 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:612 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:11
L:612 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:807 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:17
L:807 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:809 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:17
L:809 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:810 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:17
L:810 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:812 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:17
L:812 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
```

VERIFICATION SUMMARY
PATENT APPLICATION: **US/10/051,902**

DATE: 02/28/2002
TIME: 10:25:25

Input Set : **N:\Crf3\RULE60\10051902.raw.txt**
Output Set: **N:\CRF3\02282002\J051902.raw**

```
L.814 M 258 W: Mandatory Feature missing, <223> not found for SEQ ID#:17
L:814 M 341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L.815 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:17
L.815 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:841 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:18
L:841 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18
L:847 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:18
L:847 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18
L:849 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:18
L:849 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18
L:855 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:18
L:855 M 341 W: (46) "n" or "Xaa" used, for SEQ ID#:18
L.1029 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:22
L:1029 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22
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